

ABSTRACT

5 The present invention provides for an interface mechanism in a bio-separation instrument
that makes interface connections to a multi-channel cartridge. The interface mechanism precisely
positions the cartridge in relation to the support elements in the instrument (e.g., high-voltage,
gas pressure, incident radiation and detector), and makes automated, reliable and secured
alignments and connections between various components in the cartridge and the support
10 elements in the supporting instrument. The interface mechanism comprises pneumatically or
electromechanically driven actuators for engaging support elements in the instrument to
components on the cartridge. After the cartridge has been securely received by the interface
mechanism, the connection sequence is initiated. The interface provides separate high voltage
and optical connections for each separation channel in the cartridge, thus providing channel-to-
15 channel isolation from cross talk both electrically and optically.